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HISTORIC AMERICAN ENGINEERING RECORD

COMAL CREEK BRIDGE

HAER No. TX-32

Location:	Spanning Comal Creek at Business Route 46 (old State Route 46), New Braunfels, Comal County, Texas. UTM: 14/584240/3286200 USGS: New Braunfels West, Texas, quadrangle (1988).
Date of Construction:	1928-1929.
Designer:	Texas Highway Department; J. G. Morgan, assistant state bridge engineer; George G. Wickline, state bridge engineer; Gibb Gilchrist, state highway engineer.
Builder:	Bart Moore, Inc., San Antonio, Texas.
Present Owner:	Comal County.
Present Use:	Vehicular bridge.
Significance:	This reinforced concrete bridge and underpass complex features an urn-shaped balustrade and other decorative elements. Rock retaining walls were added later by the Works Progress Administration (WPA). As a principal thoroughfare serving traffic for nearby Landa Park, the structure's overall design announces an important civic space. The bridge is an interesting example of a statewide movement in the late 1920s to decrease automobile accidents at railroad grade crossings.
Historian:	J. Philip Gruen, August 1996. Revised August 1998.
Project Information:	This document was prepared as part of the Texas Historic Bridges Recording Project performed during the summer of 1996 by the Historic American Engineering Record (HAER). The project was co-sponsored by the Texas Department of Transportation (TxDOT).

Introduction: Railroad Grade Crossing Safety

In the 1920s, with automobile ownership steadily on the rise, the paving of roads across the United States connected major cities and provided the most efficient access to the places of interest — whether commercial, residential, industrial, or recreational. The path of least resistance was not always chosen for the construction of roads; if railroad tracks provided an obstacle, the roads simply approached them and then continued on the other side.

In Texas, with railroad tracks already prominent throughout the landscape and trains still a widely used mode of transportation for both business and pleasure, it is not at all surprising that the two modes of transport often came into confrontation, literally. In 1920, there were sixty-eight recorded fatalities at grade crossings, and 257 injuries. In 1929, those figures rose to 152 and 403.[1] A study conducted by the Texas Council of Safety in the late 1920s reported that approximately 25 percent of all traffic accidents occurred at railroad grade crossings.

In an attempt to rectify this problem, the Texas State Highway Department recommended that the most dangerous crossings should either be split into two levels, with a new road either dug below or raised above the existing railroad tracks, or relocated entirely. With fatalities increasing substantially in the ten-year period between 1920 and 1929, the highway department busied itself with grade separation projects throughout the state.

By 1930, the highway department had eliminated approximately 500 grade crossings, 400 by relocating highways and seventy-four by building underpasses.[2] The number of grade separations increased in the late 1920s, and in 1928 and 1929, the state completed thirty-four of them, making provisions for 146 others in upcoming years.[3] Five years later, with the new grade separations in place and automobile registration three times what it was in 1920, the number of deaths at railroad grade crossings had only barely increased.[4]

One of the crossings built during this period was along State Highway 46 over Comal Creek in the city of New Braunfels, Texas. With tracks for the Missouri, Kansas, and Texas (MKT) Railroad directly in the path of the road, the state highway department began excavations

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[1] Figures from Charles E. Simons, "Engineering Death: Off the Highways," *Texas Parade* (August 1938), p. 17.

[2] Figures from George G. Wickline, "Work of Bridge Division September 1928-September 1929," *Texas Highway Bulletin* 9, no. 12 (December 1929): 17-18.

[3] See "Grade Crossings," *Texas Highway Department Seventh Biennial Report,* September 1928-August 1930, p. 56.

[4] There were only three more deaths in 1935 than in 1920. See Simons, "Engineering Death," p. 17; and Texas Highway Department, *Texas Highway Department Tenth Biennial Report,* September 1934-August 1936, pp. xv-xix.

beneath the railroad in May 1928, and by September of the following year, the Comal Creek Bridge and railroad underpass opened to traffic.

While providing a safer vehicular crossing, the Comal Creek Bridge and underpass, built with funds from the city, the county, the state, and the railroad, also provided a detailed, prominent vehicular thoroughfare to Landa Park, the city's most scenic space and its leading attraction. The design included a 351'-0"-long concrete-encased I-beam bridge with a concrete urn-shaped balustrade, with a 70'-0"-long reinforced concrete slab railroad underpass with interior arch supports and decorative solid concrete retaining walls immediately to the north. During the 1930s, the Works Progress Administration (WPA) is reported to have built the random ashlar rock retaining wall lining the approach roadway on the north side of the underpass.

The combination of features along the bridge, the underpass, and walls lining the approach road exemplify not only the highway department's early efforts to reduce traffic fatalities, but also a civic desire to make roads and bridges part of an overall beautification project. The bridge and its features contribute to the natural beauty of the surroundings, particularly to Landa Park, to which the bridge, as the principal vehicular thoroughfare from the city center to the park, is intimately connected.

Site Development to 1925

Landa Park has played an important role in the establishment, growth and continued stability of New Braunfels. In fact, the area's first industries — a grist mill, sawmill, flour mill, and cotton gin — were built by H. W. Merriweather in 1847 at what later became the entrance to the park. He built his industries at this location to take advantage of the plentiful water power provided by the nearby Comal River.[5] Merriweather's industries contributed to the initial growth of the New Braunfels economy, which was based primarily upon supplying travelers on the San Antonio-Austin route with basic needs: clothes, wagons, farm supplies, furniture, and leather goods.[6] Many of these travelers, however, actually decided to settle in New Braunfels, and by 1850, the city had become the fourth largest in Texas.[7]

In 1860, local merchant Joseph Landa bought the land and the industries formerly owned by Merriweather, adding an electric plant, an ice manufacturing plant, and a cotton oil mill. The

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[5] Gertrude K. Rawson, *New Braunfels: A Story of Triumph in Texas* (New Braunfels: Zeitung Publishing Company, 1932), p. 5. At 3.24 miles, the Comal River is the shortest river in Texas.

[6] In the twentieth century, flour mills, cotton mills, and textile factories provided the basis for steady growth.

[7] Ron Tyler, ed. "New Braunfels," *The New Handbook of Texas,* vol. 4 (Austin: Texas State Historical Association, 1996), p. 987.

landscape, however, was not strictly industrial: it also included a naturally-fed springs (the largest in Texas), wooded hills, grassy prairies, a variety of trees, and rock outcrops. When electric power replaced water power for city use in the late nineteenth century, Landa decided to make the land surrounding the short river available for public use. By the time Joseph Landa's son Harry took over in 1896, the site was known as "Landa's Pasture" and had become a popular picnic spot for New Braunfels residents.

The pasture's appeal began to take on a regional significance the following year when Helen Gould, daughter of railroad magnate Jay Gould, visited the park. Captivated by its natural beauty, she suggested that the International-Great Northern Railroad (IGN), one of her father's lines that had substantially boosted the local economy when it set up a station in New Braunfels in 1881, extend a spur into the park. The establishment of Landa Park followed the completion of the spur in 1898.[8] Two years later, the MKT line also arrived in New Braunfels and extended a track into the park, and the two railroads together brought tourists into the old pasture for Sunday excursions during the first few decades of the twentieth century.[9]

Catering to his growing clientele, Landa built a hotel and a bathhouse in the park around the turn of the century. Shortly thereafter, he added an outdoor pavilion for dancing, play areas for the kids, fireplaces, rustic trails, bridges, a ballpark, and a clubhouse facility.[10] Thus, the establishment of the park and its facilities was in keeping with the turn-of-the-century progressive trend toward more parks. This trend was based on a theory that recreational activities were crucial for the creation of a better society, which grew out of social reform movements of the nineteenth century and was encouraged by President Theodore Roosevelt at the turn of the twentieth.

Landa Park and its amenities made tourism the leading industry in New Braunfels by 1920. Brochures published by the New Braunfels Chamber of Commerce promoted the park above all else, hoping that it would not only lure tourists but also encourage industrial and commercial investment in the city. These brochures referred to the city and the park, interchangeably, as "The Garden Spot of Texas," "The Oasis Beautiful of Texas," and "The Beauty Spot of Texas". One described the "nationally" known park and the city's warm year-round climate as

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[8] The park officially opened as a private resort area in 1899.

[9] Most of these visitors came in from either San Antonio or Austin. See Ron Tyler, ed., "Landa Park," *New Handbook of Texas,* vol. 4, p. 54.

[10] New Braunfels Chamber of Commerce, *New Braunfels, Texas: Vacationland* (1930). The New Braunfels Tigers, a minor league team, were regular tenants of the park, but the Philadelphia Phillies and other major league teams also used the facilities for spring training. In the 1960s, the ballpark was dismantled and replaced by a swimming pool.

> 'The Oasis of Texas,' Beautiful Landa Park, the finest, most modern watering place in the south, is situated along the banks of the Comal Springs at New Braunfels. Here, truly, is the garden spot of Texas, visited annually by thousands who enjoy their vacations admit the beauties of nature in a climate that during the hottest months of summer are comfortable as could be desired.[11]

One of the brochures also noted the city's "unexcelled" transportation facilities, and another mentioned that New Braunfels was situated only thirty miles from San Antonio and fifty miles from Austin, on "excellent tarviated automobile roads, as well as on the IGN and MKT railroads."[12] These promotional brochures spurred thousands upon thousands of people to visit the park. Despite the "excellent" roads, many visitors approached the park from the east, crossed the MKT tracks at grade, and proceeded across what had become a rickety, timber bridge extending over Comal Creek.

As early as 1880, when Joseph Landa recognized a need to make it convenient for farmers to bring their crops to the mills and to bring the products of his industries to the city and the IGN train depot.[13] In 1880, a timber bridge was built over the creek at an angle from Seguin Avenue, just northwest of the present bridge and underpass. When tracks for the MKT line were laid parallel to the creek by 1900, vehicular traffic had to cross the tracks in order to reach the bridge. This traffic now included pleasure-seekers heading to and from the park.

Design and Construction, 1925-1929

By the early 1920s, because of the increasing number of visitors to the park, the bridge had deteriorated to the point where its replacement became imperative. In a letter to the state highway department dated November 3, 1925, New Braunfels Mayor F. C. Blumberg wrote:

> Do you realize that this bridge has been condemned years ago and that it is now in a very dangerous condition, not losing sight of the fact that unless this bridge is finished by April 1926, which is the time the Park Season opens for tourists to come to Landa's Park and there are thousands of cars crossing this bridge daily.[14]

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[11] New Braunfels Chamber of Commerce, *The Oasis Beautiful of Texas: Facts and Figures* (1920).

[12] See ibid.; New Braunfels Chamber of Commerce, *Camp Placid, Landa Park: The Ideal Summer Resort* (1920), or *New Braunfels, Texas: Vacationland.*

[13] *New Braunfeler Zeitung,* 4 June 1880.

[14] F. C. Blumberg, letter to State Highway Department, 3 November 1925, in Project Correspondence: Colorado County through Coryell County, Records Management, Texas Department of Transportation, 1917-30, microfilm.

By 1925, it was agreed that a new bridge be built jointly by the state highway department, Comal County, and the city of New Braunfels. The county suggested that the plans and specifications for a "reinforced concrete arch bridge" at the same site as the present bridge be prepared by county engineers, with approval of the state highway department, for approximately $50,000.00. The county chose Terrell Bartlett Engineers of San Antonio to design the structure, based upon his previous work in the city.[15]

This request, however, was denied by the highway department because of a new law stipulating that all surveys, plans, and specifications for bridges along state roads be completed by the state highway department, even within city limits. As a state highway bridge, the project was put under the supervision of State Highway engineer Gibb Gilchrist and State Bridge Engineer George G. Wickline.

Gilchrist was required to approve the plans for the new Comal Creek Bridge. Born in 1887, Gilchrist earned a degree in civil engineering from the University of Texas in 1909 and then worked for the engineering department of the Santa Fe Railway from 1910 to 1917 on railroad relocation, track construction, and water supply systems. After a brief stint with the U.S. Army during the first world war, he was employed as a resident and division engineer with the state highway department in San Antonio and San Angelo from 1919 to 1923. In late 1923, he was appointed road construction engineer for the state highway department, and three months later, in early 1924, he became the state highway engineer. He held this post for only one year, however, and became a consulting engineer in Dallas from 1925 to 1927. That year, however, he returned to head the state highway department, and remained in that position until 1937. During Gilchrist's tenure as state highway engineer, among other projects, he supervised the construction of the state's farm-to-market road system and administered a program of highway development that expended more than $3 million.[16]

Wickline, as the state bridge engineer, was more directly involved in the state's bridge projects. Born in 1883 and educated at the University of Texas at Austin, Wickline was the first to hold the post of state bridge engineer since the creation of the highway department in 1917. During his twenty-six years at that post, Wickline supervised the construction of numerous highway bridges throughout Texas, and prepared standard specifications for steel, concrete, and

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[15] Carl Roeper, letter to Texas State Highway Commission, 10 August 1925, in Project Correspondence.

[16] In 1936, Gilchrist became president of the American Association of State Highway Officials, and in 1937, he resigned from the highway department and became dean of engineering at what later became Texas A&M University. Eventually, he became president of Texas A&M and then the first chancellor of the Texas A&M University system. Information on Gilchrist from Ron Tyler, ed., *The New Handbook of Texas,* vol. 3, pp. 158-59, and Kirk Kite, "A History of the Texas State Department of Highways and Public Transportation 1917-1980" (Ph.D. diss., University of New Mexico, 1981), pp. 152-53.

timber that could be applied to bridges in any part of the state. Between 1936 and 1938, he temporarily stepped down to oversee the construction of the Rainbow Bridge connecting Orange and Port Arthur on State Highway 87 over the Neches River — one of the world's tallest bridges.[17]

By late December of 1925, Wickline suggested looking into the possibility of combining the new Comal Creek Bridge with the elimination of the grade crossing at the MKT tracks.[18] In a letter to assistant bridge engineer J. G. Morgan, who was assigned the specific duties of drawing the bridge plans, Wickline mentioned that the highway department did "not wish to overlook the opportunity to eliminate a grade crossing wherever possible."[19]

The state highway department at this time was involved with numerous projects involving the elimination of grade crossings; since the creation of the Texas Highway Department in 1917 the elimination of grade crossings had become one of Wickline's most time-consuming projects. In 1928 alone, the state highway department eliminated approximately 100 grade crossings, by underpasses or otherwise.[20] Some of the grade crossing eliminations were paid for in part by the railroad companies, so Wickline appealed to the chief engineer of the MKT to offer financial assistance for the Comal Creek Bridge project.

In early 1926, the state highway department drew up plans for two types of bridges: one with reinforced concrete barrel arches and open spandrels at the location of the old bridge, leaving the grade crossing intact, and the other for a reinforced concrete structure "of suitable design" to be built in conjunction with a grade separation south of the present bridge.[21] A grade separation at the present bridge site was not suggested because of the larger number of tracks at that location, requiring a longer and more expensive underpass than at the southern location. An arched design was also not considered for the southern site, because this mode of construction was more costly than simple concrete piers, and a bridge of arched design combined with an

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[17] For information on Wickline, see, for example, "Famed Texas Builder of Bridges Dies," *Dallas News,* 28 November 1943, or Joseph E. King, *A Historical Overview of Texas Transportation, Emphasizing Roads and Bridges* (Lubbock, Texas: Center for History of Engineering and Technology, Texas Tech University), pp. 56-65.

[18] Apparently, the MKT railroad made a plan to eliminate the railroad grade crossing per the mayor's request as early as 1924, but this plan was rejected. See F. Ringer, letter to R. J. Hank, 5 February 1926, in Project Correspondence.

[19] George G. Wickline, letter to J. G. Morgan, 2 December 1925, in Project Correspondence.

[20] Texas Highway Department, "Making Texas Highways Safe with the Grade Crossing Eliminated," *Texas Highway Bulletin* 8, no. 4 (April 1928), p. 1.

[21] See George G. Wickline, letter to A. C. Love, 2 May 1926, in Project Correspondence.

underpass would have overextended the budget. If a bridge was to be combined with an underpass, it was determined that the bridge must have concrete piers, rather than arches, in order to reduce overall costs.

There were, however, some drawbacks to the proposed bridge with a grade separation south of the present structure. Aside from the fact that the grade separation alone made that plan expensive, the approach also required the demolition of property owned by New Braunfels resident Irma Guinn. But the MKT offered $13,000.00 toward the construction of the grade separation to help defray overall costs, and Guinn agreed to a $1,500.00 settlement along with a promise that the city would compensate for any further property damages incurred during construction. The state highway commission had already allocated $22,000.00 in state aid to the project from a federal aid grant, the city of New Braunfels had agreed to contribute $25,000.00, and Comal County had offered $15,000.00.

By December 2, 1927, however, the project was still not under way. H. A. Triesch, who had since taken over as mayor of New Braunfels, wrote a letter to Wickline explaining that the city and county were prepared to begin construction. However, the approval of the new bridge site and the accompanying paperwork resulted in more delays. On April 17, 1928, with interest on city and county money already earmarked for the project accruing daily, Triesch wrote another letter to a state highway official expressing the project's urgency.

This letter may have had some effect, for a highway official wrote back two days later informing the mayor that the bridge plans were now ready for inspection by Gibb Gilchrist, the state highway engineer. After Gilchrist's approval, bids for the contract were submitted by the highway department on May 25, 1928. The low bid of $49,729.65 was offered by Walsh, Burney, and Moore of San Antonio.[22] Finally, on July 6, 1928, a resolution passed permitting construction, and the contractors began work on July 27, 1928.

Bart Moore, the vice president of the contracting firm, was presented with the authority to head the project for the contractors. Halfway through the construction, Moore took over the firm and renamed it Bart Moore, Inc.[23] R. S. Jahn of New Braunfels was appointed by the state as resident engineer, assigned to oversee project construction.

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[22] The bids, from lowest to highest, were as follows: Walsh, Burney, and Moore of San Antonio, $49,729.65; Austin Bridge Company of Dallas, $50,904.98; Tibbetts Construction Company of Fort Worth, $53,501.48; Schriener, Hughes, and Chandler of Seguin, Texas, $54,126.86; Thomas and Ratliff of Rogers, Texas, $54,950.19; and Kroeger-Brooks Construction Company of San Antonio, $57,463.92.

[23] Walsh, Burney, and Moore also filled contracts for metal truss bridges. One example is a bridge over the San Antonio River in San Antonio's King William District.

Description

The project begins just west of the intersection of Seguin Avenue and Zinz Street, a few blocks west of the center of New Braunfels. At this point the avenue begins a gradual five percent downward grade to the MKT underpass. This approach, as originally built, included concrete retaining walls on either side of the roadway, flanking two sidewalks. When the approach span reaches the underpass, only 11'-8" is available for vertical clearance, despite the fact that the original plans called for a minimum 12'-0" clearance, and state specifications at this time apparently required at least 15'-0".

The 351'-0"-long bridge begins just south of the underpass. It extends over Comal Creek, a small tributary of the Comal River, and meets Landa Street at grade level just south of an old grist mill once part of Landa's industries. The structure consists of eight 40'-6" steel I-beam spans encased in concrete, supported by seven bents of Y-shaped concrete piers and two state highway specification type "U" concrete abutments. The piers and abutments are driven through loam, gravel, and yellow clay to soft blue clay, hard blue shale, and soapstone. The Alamo Iron Works Company of San Antonio supplied the steel, and Texas State Highway Department specifications governed the project.

The bridge features forty-one bays of reinforced concrete urn-shaped balustrades, or rail spindles, on either side, framing 2'-5" sidewalks and a 20'-0" roadway. Each bay consists of six spindles apiece and is separated by square pylons, or newels, each approximately 8'-1" apart. The railing is an example of the type "J" standard railing from the list of specifications for bridges and culverts developed by the highway department in 1918.[24] On top of the railings, according to the original plans, were twenty-four light standards of pressed steel, approximately 8'-0" in height. Each was fitted with a 12"-diameter "Daylight" white globe and a 200-watt tungsten lamp.

The 70'-0"-long concrete slab underpass is supported by solid concrete wall abutments. Two interior concrete walls, each pierced by seven reinforced concrete arches, provide additional support. Two sidewalks, located between the abutment walls and interior arched walls, accommodate pedestrian traffic. Square and rectangular shapes, and shields containing the MKT logo, are formed into the underpass' north and south ends. A solid concrete balustrade with square newel posts and corresponding square and rectangular indentations, surmounts the underpass structure.

By September 1929, Texas State Highway Department contractors readied the bridge for final inspection, and it opened to traffic shortly thereafter. The total project cost was $67,069.40. The MKT was responsible for completing the underpass, which opened at the same time. After years of political machinations, the city of New Braunfels finally had a new span over Comal

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[24] Texas State Highway Department, *Standard Railings for Bridges and Culverts,* May 1918 (Texas Department of Transportation, Environmental Affairs Division, Austin, Texas).

Creek from the downtown area into the park. With its light standards and railing, the bridge simultaneously marked a ceremonial entrance into the park and a western gateway into the city.[25]

History of Structure and Site, 1929 to Present

The effects of the Depression, however, ushered in a most unceremonious era for Landa Park. In 1927, Landa was forced to sell the property because of stipulations in his mother's will requiring that the property be sold ten years after her death. The Jarrett Investment company then purchased the park, but sold it to the Trinity Universal Insurance Company when the former company fell into receivership the same year. The Trinity company maintained the park until 1933, when lack of funds compelled it to close the park and seal it with barbed wire.

The park decayed until community members and the New Braunfels Chamber of Commerce petitioned the city to save it. On June 25, 1936, the city purchased 128 acres of the parkland, and then over 1,000 volunteers showed up to assist in its clearance and rehabilitation.[26] In 1936, New Braunfels received funds from the Works Progress Administration (WPA) to assist in the park's rehabilitation. A number of new features were added to the park at this time, many of which featured a rough-cut type of local stone.[27] This stone was used for the walls and columns of a small bridge over a tributary of the Comal River in the park, for abutments supporting picnic tables, for the walls of some of the park buildings and original industries, and for the park entrance signs. Outside the park, although not related to the 1936 park additions, variations of the stone appear on the county courthouse, supporting the gazebo in the middle of the town circle, and on the facade of the New Braunfels Chamber of Commerce. The consistent appearance of this stone as one moves from park to city, or vice versa, creates a continuity and makes the whole area rather distinctive.

It may have been in 1936, possibly with WPA assistance, that the city added rock retaining walls to the Comal Creek Bridge's approach road. The walls include two sets of steps leading to the embankments on either side and four tapering square columns with teacup-shaped capitals. These columns are nearly identical to those found on the small bridge over the Comal

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[25] For a reference to the bridge as the "western gateway" to the city, see letter to State Highway Commission, 29 April 1927, in Project Correspondence.

[26] Ron Tyler, ed., "Landa Park," *The New Handbook of Texas,* vol. 4, p. 54.

[27] Among the additions and improvements to Landa Park paid for with WPA funds were the remodeling of the bath and concession houses and the addition of boat landings, retaining walls, and parking areas.

River in Landa Park, and they probably meshed well with the light standards that once graced the railings atop the Comal Creek Bridge.[28]

After the city bought and refurbished Landa Park, tourism once again boomed in New Braunfels. In later years, private companies converted some of Landa's no longer functioning industrial buildings to new uses catering to the visitors frequenting the park. Those uses include inner tube and canoe rental, snack bars, and park information centers. In November, some of the buildings host the annual "Wurstfest," which draws people from all over the state. In 1981, Landa Park became a registered arboretum, and in 1991, the city added walkways and a botanical garden.

The bridge, however, did not fare as well. Despite the addition of the rock retaining walls, the bridge has decayed due to poor maintenance and the ravages of time. Today, the retaining walls are crumbling, and one of the entrance columns is missing. Furthermore, there are numerous cracks in the concrete, and some of that which comprises the rail spindles has spalled altogether, leaving only the steel reinforcing bars. Contemporary street lights, too, have long since replaced the original light standards. Only holes in the railings at various intervals are a reminder that a different type of lighting system may have once adorned the bridge. And although no accidents involving trains and automobiles have occurred at this location since the construction of the underpass, the low clearance and narrow, 20'-0"-wide roadway has occasionally resulted in mangled vehicles and injuries. Highway officials are currently examining the railings for safety reasons.

The bridge and underpass live on, as does the park. Since the construction of Interstate 35, the bridge has become necessary for traffic heading to the park from the interstate, and vehicles flow consistently across the bridge on summer afternoons. Even in its current condition, with its narrow roadway and limited clearance, the bridge, underpass, and approach still exhibit a certain poise, maintain formal links with Landa Park, and are integral to the overall appearance of New Braunfels.

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[28] The light standards are evident in an early photo of the bridge, reproduced in "Grade Crossings," p. 57.

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APPENDIX: Suggestions for Further Research

Some questions concerning the Comal Creek Bridge arose during the research and writing of this report. Some of these questions, due to limitations in the scope of the Texas Historic Bridges Recording Project, remain unanswered. It is suggested that scholars interested in this bridge consider pursuing the following:

1. Why was the clearance of 11'-8" accepted when the plans specifically called for a minimum clearance of 12'-0", and the state required at least 15'-0"?

2. Who paid for the rock retaining walls, when exactly were they added, and why?